



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/585,371

08/23/2006

Alain Michel Le Bail

065691-0454

2473

22428 7590 06/08/2009
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

HITESHEW, FELISA CARLA

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

06/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,371	Applicant(s) LE BAIL, ALAIN MICHEL	
	Examiner Felisa C. Hiteshew	Art Unit 1792	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6 and 10-13 and 17-28 is/are rejected.
- 7) ☒ Claim(s) 4 and 7-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>07/06/2006 & 11/13/2006</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The PTOL 1449s of 07/06/2006 and 11/13/2006 have been received, reviewed and considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-6, 10-13 and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 02/13618, WO 00/72695 A and EP 0 765 604 A.

WO 02/13628 A teaches a partial crystallization device comprising a pump (See Fig 1(a), "HHP") for circulating the solution in a circuit of a heat exchanger formed from a tube in contact with a cooling circuit ("STMX"); "STMX" 115; STMX); the three static mixers also constitute a heat exchanger: (See page 13, lines 1—16). The circuit of the exchanger comprises a tube (15) through which the liquid flows and does not include any obstacles. Consequently, the device according to WO 02 '618' appears to comprise static means capable of delaying the appearance of crystals. The material to be partially crystallized is then sent to a static mixer that appears capable of suppressing supercooling. The feature "surface condition capable of delaying the appearance of crystals" also seems to be disclosed in document WO 02 '618 (the material flowing through the tube 15, whose internal surface has a more or less "slight" roughness.

(See page 12, lines 23-30; Fig. 1(a)).

Art Unit: 1792

WO 00/72695 A teaches a partial crystallization device comprising a pump (See Fig. 3 "6") for circulating a solution in a circuit of a heat exchanger (exchanger "4") formed from a tube in contact with a cooling circuit (7). The circuit of the exchanger comprises a tube through which the liquid flows that does not include a static mixer. Consequently, the device according to WO 00 '695 A appears to include static means capable of delaying the appearance of crystals. The material to be partially crystallized is then sent to a static mixer (3) that is capable of suppressing supercooling. (See page 17, paragraph 1 to page 18, paragraph 1; Fig. 3).

EP-A-0-765 605 teaches a partial crystallization method comprising a step that consists of circulating a solution in a circuit (See Fig. 2) of a heat exchanger. (Further See page 8, line 15 and following: "precooler"). The method comprises the steps of: maintaining the temperature below freezing temperature ("undercooled") using static maintenance means (the "precooler" may be considered to be a "static: means"); including suppression of the supercooling so as to cause the appearance of the crystallization (ultrasonic treatment").

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/13618 and EP 0 765 604 A.

WO 02/13628 A teaches a partial crystallization device comprising a pump (See Fig 1(a), "HHP") for circulating the solution in a circuit of a heat exchanger formed from a tube in contact with a cooling circuit ("STMX"); "STMX" 115; STMX); the three static mixers

also constitute a heat exchanger: (See page 13, lines 1—16). The circuit of the exchanger comprises a tube (15) through which the liquid flows and does not include any obstacles. Consequently, the device according to WO 02 '618' appears to comprise static means capable of delaying the appearance of crystals. The material to be partially crystallized is then sent to a static mixer that appears capable of suppressing supercooling. The feature "surface condition capable of delaying the appearance of crystals" also seems to be disclosed in document WO 02 '618 (the material flowing through the tube 15, whose internal surface has a more or less "slight" roughness. (See page 12, lines 23-30; Fig. 1(a)).

EP-A-0-765 605 teaches a partial crystallization method comprising a step that consists of circulating a solution in a circuit (See Fig. 2) of a heat exchanger. (Further See page 8, line 15 and following: "precooler"). The method comprises the steps of: maintaining the temperature below freezing temperature ("undercooled") using static maintenance means (the "precooler" may be considered to be a "static: means"); including suppression of the supercooling so as to cause the appearance of the crystallization (ultrasonic treatment").

The difference being that neither WO '618 nor EP '605 A teaches a step of varying the flow of solution using a valve or introducing bubbles of gas into the solution circulation circuit. However, it would have been obvious to one of ordinary skill in the art to modify and optimize the apparatus and process parameter limitations through routine experimentation in order to ensure proper orientation. The motivation being to be able to control the attachment of crystals forming onto the walls of the crystallization device.

Any minor differences in the limitations of the dependent claims have been considered. This statement is meant to include limitations such as varying the flow of solution using a valve of introducing bubbles of gas into the solution.

Furthermore, any such differences are deemed to be result-effective variables that one of ordinary skill in the art would be expected to manipulate to advantage. Additionally, such limitations can be considered to have been simply known as conventional to the artisan practicing in the art at the time the invention was made and/or were common practices which were so well known in the art that they would have been taken for granted. If applicant believes that one or more limitations are critical to the invention, then applicant should amend the claims to reflect such critical limitations as well as indicate where in the specification such critical limitations were discussed and demonstrated.

The limitations of all claims have been considered and are deemed to be within the purview of the prior art.

Allowable Subject Matter

7. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

8. Claims 4, 7-9 and 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The most relevant prior art of record is that of WO 02/13618, WO 00/72695 A and EP 0 765 604 A, which was cited by the applicant. However, it does not teach nor fairly suggest singularly or in any combination thereof crystallization, as stated in the instant invention, wherein the surface state has a low roughness at the supercooling rupture means takes the form of greater roughness, the change of direction in an elbow in the circulation circuit, and/or a chicane, and/or at least one change of section inside the circulation circuit or in which the obstacles to the circulation of the solution includes needles and/or plates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felisa Hiteshew whose telephone number is (571) 272-1463. The examiner can normally be reached on Mondays through Thursday from 5:30 AM to 4:00 PM with Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov, can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-1463.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Art Unit: 1792

Private PAIR only. For more information about the PAIR system, see

<http://pair-direct.uspto.gov>. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866- 217-9197

(toll-free).

/Felisa C. Hiteshew/

Primary Examiner, Art Unit 1792